

Title (en)
NANOSIZED CARBON MATERIAL-ACTIVATED CARBON COMPOSITE

Title (de)
VERBUNDWERKSTOFF AUS NANOSKALIGEM KOHLENSTOFFMATERIAL UND AKTIVKOHLE

Title (fr)
COMPOSITE DE CARBONE ACTIVE PAR MATIERE CARBONEE DE TAILLE NANOMETRIQUE

Publication
EP 1871709 A1 20080102 (EN)

Application
EP 06724348 A 20060413

Priority
• EP 2006003468 W 20060413
• EP 05008172 A 20050414
• EP 06724348 A 20060413

Abstract (en)
[origin: EP1712522A1] The present invention relates to carbon-carbon composite material comprising a carbonaceous carrier and nanosize carbon structures (e.g. CNT or CNF), wherein the nanosize carbon structures are grown on the carbonaceous carrier. The carrier may be porous, as in activated carbon or consists of carbon black particles. In accordance with the invention, nanocarbon growth in the pores of porous carriers can be realized. The process for the manufacture of a this carbon-carbon-composite material comprises the steps of treating a carbonaceous carrier material with a metal-containing catalyst material, said metal being capable of forming nanosize carbon structures, and growing nanosize carbon structures by means of a CVD (chemical vapour deposition) method on the treated carrier in a gas atmosphere comprising a carbon-containing gas, followed by an optional surface modification step. This process allows optimising porosity, hydrodynamical properties and surface chemistry independently from each other, which is particularly beneficial in respect of the use of the composite for water purification. Carbon black-based composites are particularly useful for filler applications.

IPC 8 full level
C01B 31/02 (2006.01); **B01J 21/18** (2006.01); **B01J 23/745** (2006.01); **B01J 23/755** (2006.01); **B82Y 30/00** (2011.01); **B82Y 40/00** (2011.01); **C02F 1/28** (2006.01); **D01F 9/127** (2006.01); **C02F 101/20** (2006.01); **C02F 101/30** (2006.01); **C02F 103/02** (2006.01)

CPC (source: EP US)
B01J 21/18 (2013.01 - EP US); **B01J 23/745** (2013.01 - EP US); **B01J 23/755** (2013.01 - EP US); **B82Y 30/00** (2013.01 - EP US); **B82Y 40/00** (2013.01 - EP US); **C01B 32/162** (2017.07 - EP US); **D01F 9/127** (2013.01 - EP US); **C02F 1/283** (2013.01 - EP US); **C02F 1/288** (2013.01 - EP US); **C02F 2101/20** (2013.01 - EP US); **C02F 2101/308** (2013.01 - EP US); **C02F 2103/02** (2013.01 - EP US); **C02F 2303/02** (2013.01 - EP US); **C02F 2303/18** (2013.01 - EP US); **C02F 2305/08** (2013.01 - EP US); **Y10T 428/25** (2015.01 - EP US); **Y10T 428/30** (2015.01 - EP US)

Citation (search report)
See references of WO 2006108683A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 1712522 A1 20061018; CN 101304945 A 20081112; EP 1871709 A1 20080102; JP 2008535763 A 20080904; JP 5147686 B2 20130220; US 2009220767 A1 20090903; WO 2006108683 A1 20061019

DOCDB simple family (application)
EP 05008172 A 20050414; CN 200680012425 A 20060413; EP 06724348 A 20060413; EP 2006003468 W 20060413; JP 2008505832 A 20060413; US 91850806 A 20060413